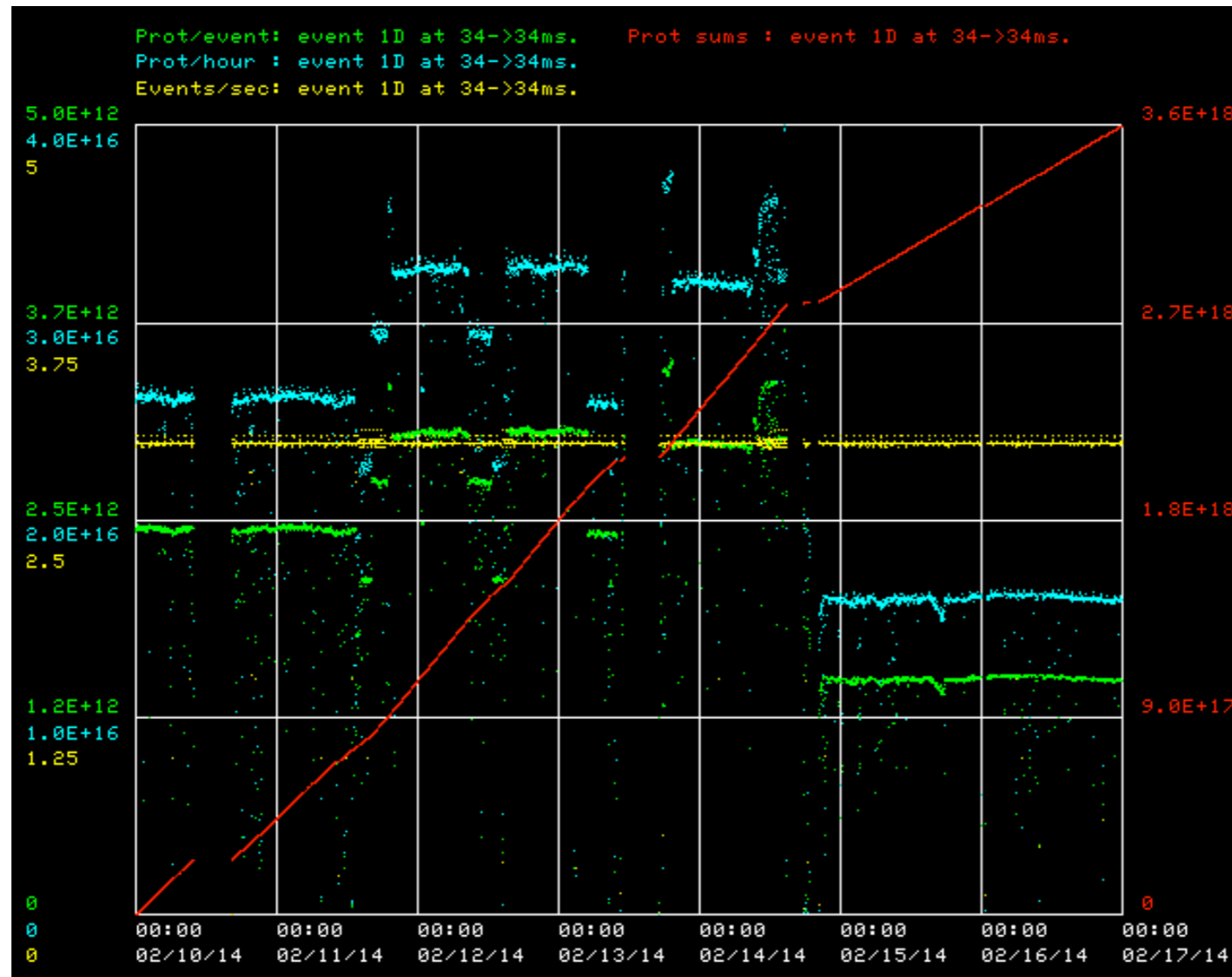


# MiniBooNE Beam-Dump run update

Feb 17th 2014

Ranjan Dharmapalan  
for the MiniBooNE Collaboration

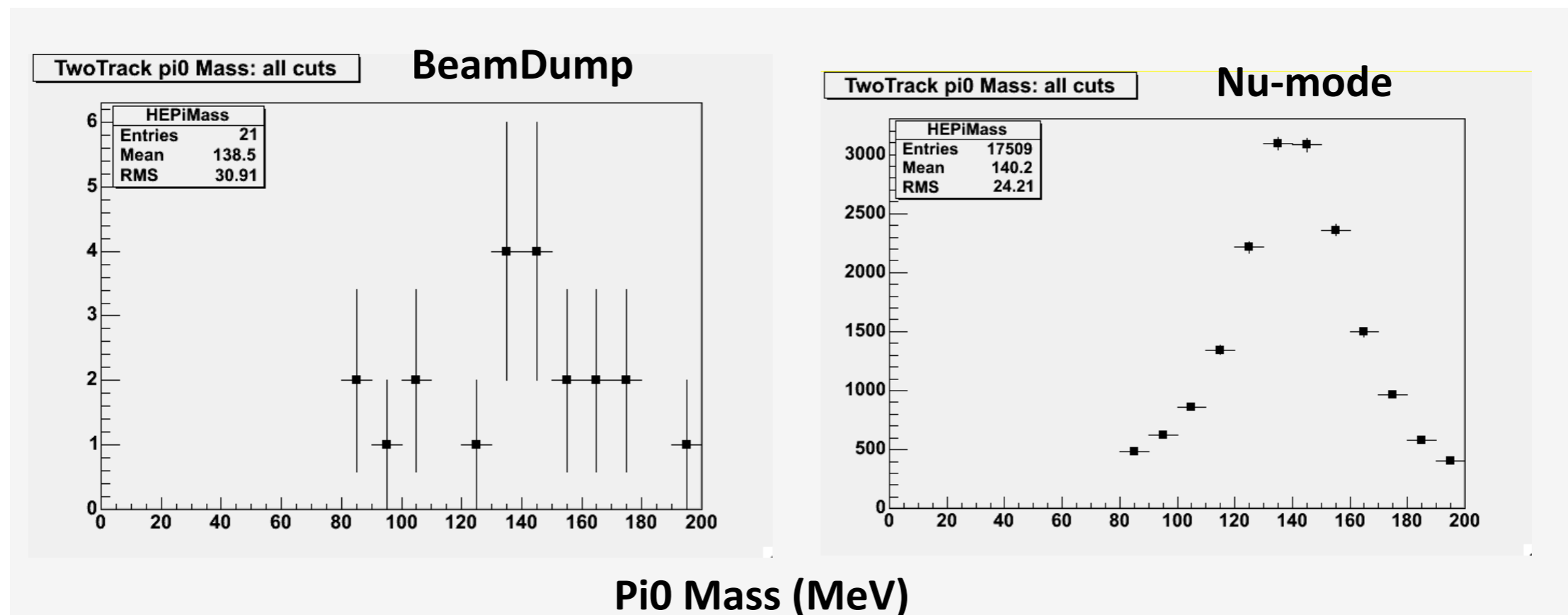
# BNB update



- 88% uptime. Rate:3.24 Hz, 2E12 ppp, pr/hr=2.41E16, and pr/week=3.6E18
- Lower turns since 2/14 due to BRF19 issues.
- Downtime last week to replace 100 CFM fan located near MI10 (used to regulate air flow in MI12A and MI12B tunnel) and work on mode1 damper

# Neutrino rate reduction in beam-dump mode

- Last week we showed the muon neutrino rate reduction in beam-dump mode: CCQE muon (neutrino mode/beam dump) = **44 +/- 3**
- Perform same check for pi0's:

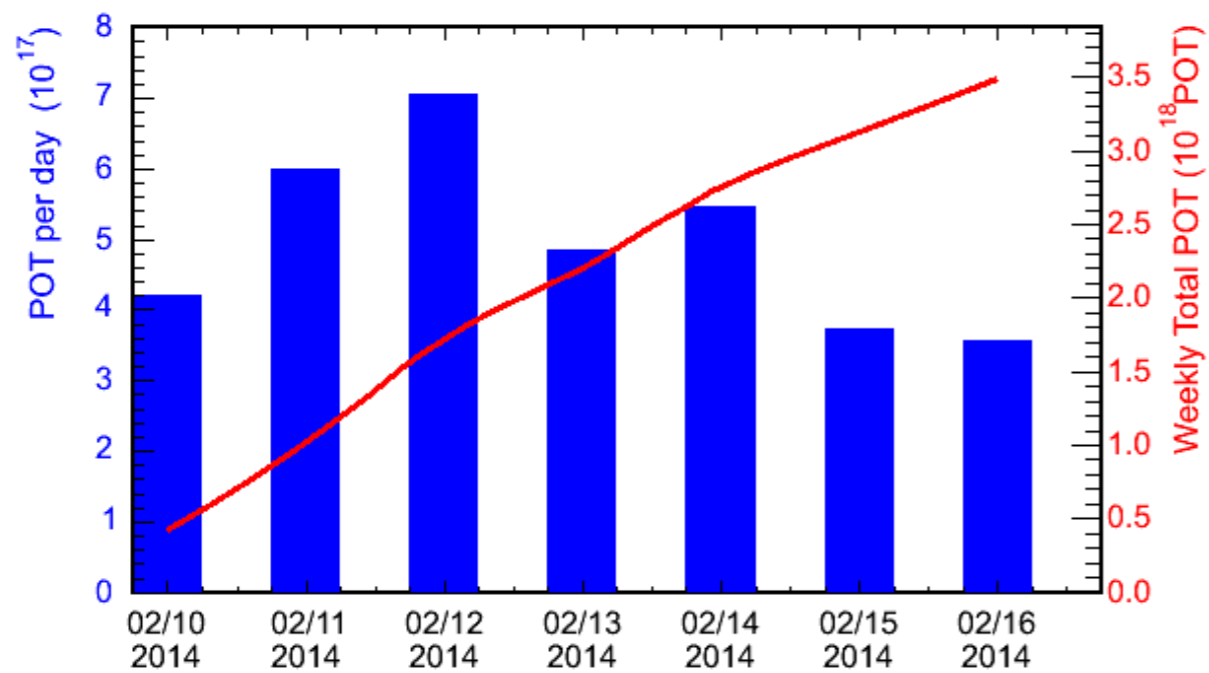


- NC pi0's (neutrino mode/beam dump) = **47.5 +/- 10.3**
- Stats low but rate reduction consistent with CCQE muon.

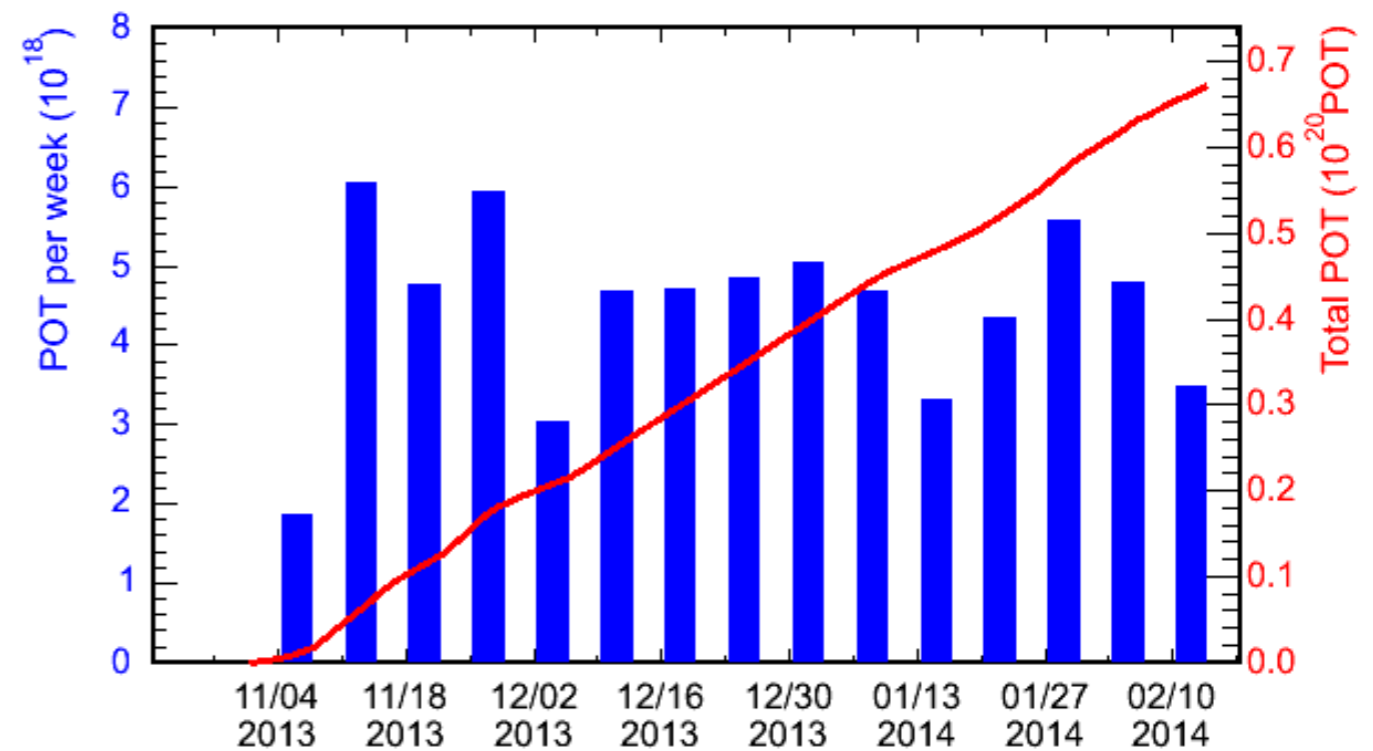
# Summary

No major issues to report

Last week

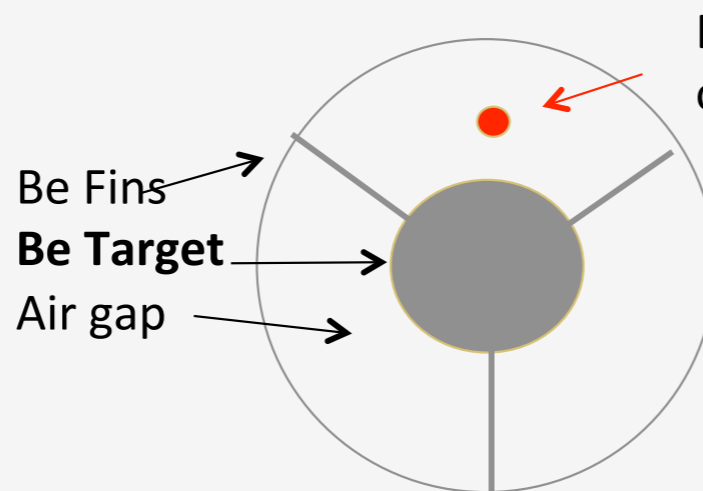


total beam dump run



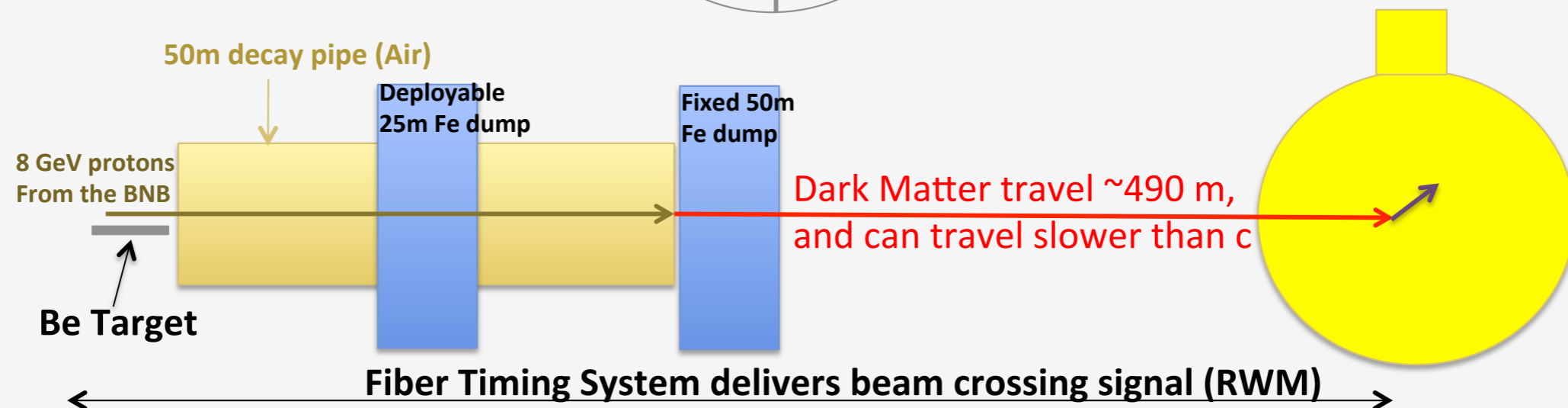
# Beam Off Target Running (Beam-Dump Mode)

MB has the capability to steer the protons past the target and onto the 25m or 50m iron dump



Beam spot position in beam off target mode ( $\sim 1$  mm spread)

- Target is 1 cm diameter
- Air gap between target and horn inner conductor is  $\sim 1$  cm



- $\pi^0$  and  $\eta$  produced by protons in the Fe quickly decay producing dark matter.
- Charged mesons are absorbed in the Fe before decaying, which significantly reduces the neutrino flux (still some production from proton-Air interactions).